

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Tony Fleming and Jean-Pierre Kinet
Application No.: Not Assigned Group Art Unit: Not Assigned
Filed: December 5, 2001 Examiner: Not Assigned
Title: CALCIUM-INDEPENDENT NEGATIVE REGULATION BY CD81 OF
RECEPTOR SIGNALLING

#3
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4/15/02

3c760 U.S. PTO
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12/05/01

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| Date: <u>12-5-01</u> |
| EXPRESS MAIL LABEL NO. <u>EV 010679812US</u> |

INFORMATION DISCLOSURE STATEMENT

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

This Information Disclosure Statement is submitted:

- ☐ under 37 CFR 1.129(a), or
(First/Second submission after Final Rejection)
- ☒ under 37 CFR 1.97(b), or
(Within any one of the following time periods: three months of filing national application (other than a CPA) or date of entry of the national stage in an international application; or before the mailing date of a first office action on the merits in a non-provisional application, including a CPA, or a Request for Continued Examination).
- ☐ under 37 CFR 1.97(c) together with either:
- ☐ a Statement under 37 CFR 1.97(e), as checked below, or
- ☐ a \$180.00 fee under 37 CFR 1.17(p), or
(After the 37 CFR 1.97(b) time period, but before final action or notice of allowance, whichever occurs first)
- ☐ under 37 CFR 1.97(d) together with:
- ☐ a Statement under 37 CFR 1.97(e), as checked below, and
- ☐ a \$180.00 fee under 37 CFR 1.17(p), or
(Filed after final action or notice of allowance, whichever occurs first, but on or before payment of the issue fee)
- ☐ under 37 CFR 1.97(i):
Applicant requests that the IDS and cited reference(s) be placed in the application filewrapper.
(Filed after payment of issue fee)

Statement Under 37 CFR 1.97(e)

- ☐ Each item of information contained in this Information Disclosure Statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement; or
- ☐ No item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the undersigned, after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of this Information Disclosure Statement.

Statement Under 37 CFR 1.704(d) (Patent Term Adjustment)

Applies to original applications (other than design) filed on or after May 29, 2000

- ☐ Each item of information contained in the Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart application and this communication was not received by any individual designated in § 1.56(c) more than thirty days prior to the filing of the Information Disclosure Statement.
- ☒ Enclosed herewith is form PTO-1449:
- ☐ Copies of the cited references are enclosed.
- ☒ All cited references are enclosed except those entered in prior application, U.S. Application No. 08/954,279, to which priority under 35 U.S.C. 120 is claimed. The earlier application contains copies of the cited references.
- ☐ The listed references were cited in the enclosed International Search Report in a counterpart foreign application.
- ☐ The "concise explanation" requirement (non-English references) for reference(s) [] under 37 CFR 1.98(a)(3) is satisfied by:
- ☐ the explanation provided on the attached sheet.
 - ☐ the explanation provided in the Specification.
 - ☐ submission of the enclosed International Search Report.
 - ☐ the enclosed English language abstract.

☐ Applicant requests that the following non-published pending applications be considered:

Examiner's
Initials

_____ U.S. Patent Application No. [], by [inventor(s)], filed [], Docket No.: []

_____ U.S. Patent Application No. [], by [inventor(s)], filed [], Docket No.: []

_____ U.S. Patent Application No. [], by [inventor(s)], filed [], Docket No.: []

Examiner

Date

☐ A copy of each above-cited application, including the current claims, is enclosed.

☐ A copy of each above-cited application, including the current claims, is enclosed, except those entered in prior application, U.S. Application No. [], to which priority under 35 U.S.C. 120 is claimed.

The Examiner is requested to return a copy of the above list of pending applications indicating which references were considered with the next office communication.

It is requested that the information disclosed herein be made of record in this application.

Method of payment:

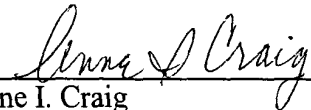
☐ A check for the fee noted above is enclosed, or the fee has been included in the check with the accompanying Reply. A copy of this Statement is enclosed.

☐ Please charge Deposit Account 08-0380 in the amount of \$[]. A copy of this Statement is enclosed.

☒ Please charge any deficiency in fees and credit any overpayment to Deposit Account 08-0380.

Respectfully submitted,

HAMILTON, BROOK, SMITH & REYNOLDS, P.C.

By 
Anne I. Craig
Registration No.: 32,976
Telephone: (978) 341-0036
Facsimile: (978) 341-0136

Concord, MA 01742-9133

Dated: 12/5/01

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| FORM PTO-1449 (REV. 7-80) | | ATTY. DOCKET NO. 1440.1088-005 | SERIAL NO. Not Assigned |
| INFORMATION DISCLOSURE CITATION IN AN APPLICATION December 5, 2001 (Use several sheets if necessary) | | APPLICANT Tony Fleming et al. | |
| | | FILING DATE December 5, 2001 | GROUP Not Assigned |
| OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.) | | | |
| AR | Jouvin, M-H.E., et al., "Differential Control of the Tyrosine Kinases Lyn and Syk by the Two Signaling Chains of the High Affinity Immunoglobulin E Receptor", <i>The Journal of Biological Chemistry</i> , 269(8):5918-5925 (1994) | | |
| AS | Penhallow, R.C., et al., "Temporal Activation of Nontransmembrane Protein-Tyrosine Kinases Following Mast Cell FcεRI Engagement", <i>The Journal of Biological Chemistry</i> , 270(40):23362-23365 (1995) | | |
| AT | Scharenberg, A.M., et al., "Reconstitution of Interactions Between Tyrosine Kinases and the High Affinity IgE Receptor Which Are Controlled by Receptor Clustering", <i>The EMBO Journal</i> , 14(14):3385-3394 (1995) | | |
| AU | Lin, S., et al., "The FcεRIβ Subunit Functions as an Amplifier of FcεRIγ-Mediated Cell Activation Signals", <i>Cell</i> , 85:985-995 (1996) | | |
| AV | Paul, W.E., et al., "Lymphokine and Cytokine Production by FcεRI ⁺ Cells", <i>Advances in Immunology</i> , 53:1-29 (1993) | | |
| AW | Scharenberg, A.M. and Kinet, J-P., "Early Events in Mast Cell Signal Transduction", <i>Chem. Immunol.</i> , 61:72-87 (1995) | | |
| AX | Ravetch, J.V. and Kinet, J-P., "Fc Receptors", <i>Annu. Rev. Immunol.</i> , 9:457-492 (1991) | | |
| AY | Shaw, A.S., et al., "Interactions of TCR Tyrosine Based Activation Motifs with Tyrosine Kinases", <i>Immunology</i> , 7:13-20 (1995) | | |
| AZ | Choi, O.H., et al., "Calcium Mobilization via Sphingosine Kinase in Signalling by the FcεRI Antigen Receptor", <i>Nature</i> , 380:634-636 (1996) | | |
| AR2 | Guthmann, M.D., et al., "A Secretion Inhibitory Signal Transduction Molecule on Mast Cells is Another C-Type Lectin", <i>Proc. Natl. Acad. Sci.</i> , 92:9397-9401 (1995) | | |
| AS2 | Katz, H.R., et al., "Mouse Mast Cell gp49B1 Contains Two Immunoreceptor Tyrosine-Based Inhibition Motifs and Suppresses Mast Cell Activation When Coligated with the High-Affinity Fc Receptor for IgE", <i>Proc. Natl. Acad. Sci.</i> , 93:10809-10814 (1996) | | |
| AT2 | Wright, M.D. and Tomlinson, M.G., "The Ins and Outs of the Transmembrane 4 Superfamily", <i>Immunology Today</i> , 15(12):588-594 (1994) | | |
| AU2 | Fearon, D.T. and Carter, R.H., "The CD19/CR2/TAPA-1 Complex of B Lymphocytes: Linking Natural to Acquired Immunity", <i>Annu Rev. Immunol.</i> 13:127-149 (1995) | | |
| AV2 | Secrist, H., et al., "Ligation of TAPA-1 (CD81) or Major Histocompatibility Complex Class II in Co-Cultures of Human B and T Lymphocytes Enhances Interleukin-4 Synthesis by Antigen-Specific CD4 ⁺ T Cells", <i>Eur. J. Immunol.</i> , 26:1435-1442 (1996) | | |
| AW2 | Todd, S.C., et al., "CD81 Expressed on Human Thymocytes Mediates Integrin Activation and Interleukin 2-Dependent Proliferation", <i>J. Exp. Med.</i> , 184:2055-2060 (1996) | | |
| EXAMINER | | DATE CONSIDERED | |

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| FORM PTO-1449 (REV. 7-80) | | ATTY. DOCKET NO. 1440.1088-005 | SERIAL NO. Not Assigned |
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| | | FILING DATE December 5, 2001 | GROUP Not Assigned |
| OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.) | | | |
| | AX2 | Oren, R., et al., "TAPA-1, the Target of an Antiproliferative Antibody, Defines a New Family of Transmembrane Proteins", <i>Molecular and Cellular Biology</i> , 10(8):4007-4015 (1990) | |
| | AY2 | Boismenu, R., et al., "A Role for CD81 in Early T Cell Development", <i>Science</i> , 271:198-200 (1996) | |
| | AZ2 | Imai, T., et al., "Molecular Analyses of the Association of CD4 with Two Members of the Transmembrane 4 Superfamily, CD81 and CD82", <i>The Journal of Immunology</i> , 155:1229-1239 (1995) | |
| | AR3 | Angelisová, P., et al., "Association of Four Antigens of the Tetraspans Family (CD37, CD53, TAPA-1 and R2/C33) with MHC Class II Glycoproteins", <i>Immunogenetics</i> , 39:249-256 (1994) | |
| | AS3 | Mannion, B.A., et al., "Transmembrane-4 Superfamily Proteins CD81 (TAPA-1), CD82, CD63, and CD53 Specifically Associate with Integrin $\alpha_4\beta_1$ (CD49d/CD29)", <i>The Journal of Immunology</i> , 157:2039-2047 (1996) | |
| | AT3 | Berditchevski, F., et al., "A Novel Link Between Integrins, Transmembrane-4 Superfamily Proteins (CD63 and CD81), and Phosphatidylinositol 4-Kinase", <i>The Journal of Biological Chemistry</i> , 272(5):2595-2598 (1997) | |
| | AU3 | Ono, M., et al., "Role of the Inositol Phosphatase SHIP in Negative Regulation of The Immune System by the Receptor Fc γ RIIB", <i>Nature</i> , 383:263-266 (1996) | |
| | AV3 | Burshtyn, D.N., et al., "Recruitment of Tyrosine Phosphatase HCP by the Killer Cell Inhibitory Receptor", <i>Immunity</i> , 4:77-85 (1996) | |
| | AW3 | Galli, S.J., "New Concepts About the Mast Cell", <i>The New England Journal of Medicine</i> , 328(4):257-265(1993) | |
| | AX3 | Maecker, H.T. and Levy, S., "Normal Lymphocyte Development but Delayed Humoral Immune Response in CD81-null Mice", <i>J. Exp. Med.</i> , 185(8):1505-1510 (1997) | |
| | AY3 | Miyazaki, T., et al., "Normal Development But Differentially Altered Proliferative Responses of Lymphocytes in Mice Lacking CD81", <i>EMBO J.</i> , 16(14):4217-4225 (1997) | |
| | AZ3 | Tsitsikov, E.N., et al., "Impaired CD19 Expression and Signaling, Enhanced Antibody Response to Type II T Independent Antigen and Reduction of B-1 Cells in CD81-Deficient Mice", <i>Proc. Natl. Acad. Sci., USA</i> , 94:10844-10849 (1997) | |
| | AR4 | Andria, M. L., et al., "Genomic Organization and Chromosomal Localization of the TAPA-1 Gene", <i>The Journal of Immunology</i> , 147(3):1030-1036 (1991) | |
| | AS4 | Levy, Shoshana, et al., "Structure and Membrane Topology of TAPA-1", <i>The Journal of Biological Chemistry</i> , 266(22):14597-14602 (1991) | |
| | AT4 | Benhamou, M., et al., "Protein Tyrosine Kinases in Activation Signal of Human Basophils Through the Immunoglobulin E Receptor Type I", <i>Journal of Leukocyte Biology</i> , 59:461-470 (1996) | |
| | AU4 | Fleming, Tony J., et al., "Negative Regulation of Fc ϵ RI-mediated Degranulation by CD81", <i>J. Exp. Med.</i> , 186(8):1307-1314 (1997) | |
| EXAMINER | | DATE CONSIDERED | |